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HEALTH AND FITNESS

By
BERNARD BERNARD



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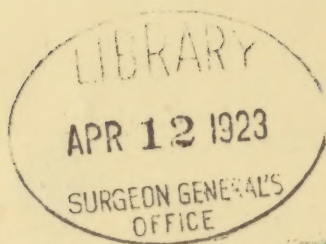
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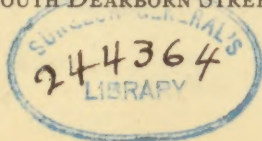
Editor of "HEALTH AND LIFE"



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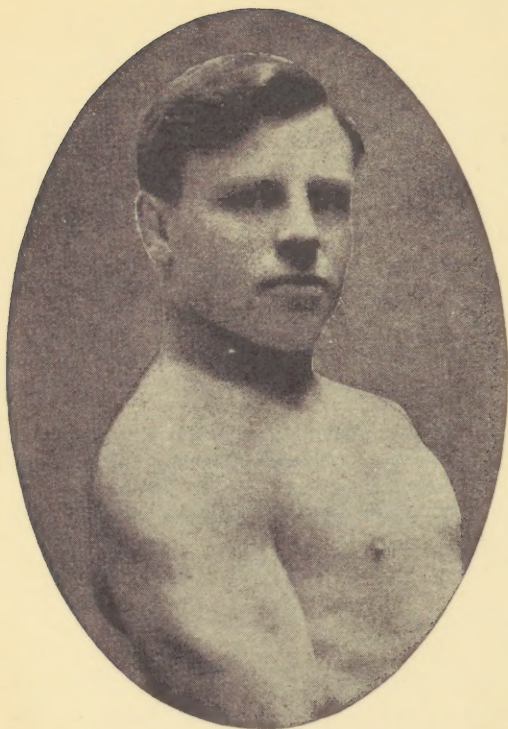
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BERNARD BERNARD

Phys. B., M. S. P., M. P. C. (Lond.)

Editor of HEALTH AND LIFE

President American Continental Weightlifters Association, Vice-President British Weightlifters Association, President "Health and Life" Fellowship, International Featherweight Wrestling Champion, Representative (Undefeated) Olympic Games, Antwerp, 1920.

Dedicated

to

Health, strength and fitness lovers all
over the world, and those wise and fortunate
enough to look to Nature for
her methods of bringing joy into life.

PREFACE.

It is my one hope that this book proves useful to mankind in showing the way to the healthy life. Life can be made beautiful and happy for everybody. Everybody has the right to a long life of joy and health. Those who are unhappy and unhealthy are so because they have not seen in Nature all her wonders and glories.

Nature's most wonderful accomplishment is the human body. When it is healthy and well developed it is the most beautiful thing in the world. There is not a work of architecture or painting or sculpture which can compare with the body of a man whose muscles are rippling beneath his soft, velvet skin, or that of a woman with its living curves and outlines.

Human art can but approach Nature in her work, but it can point out the good, the true and the beautiful in her,

and inspire each one of us to seek the things worth while. Each of us has a body which can express joy, harmony, health and accomplishment, or it may express pain, misery, disease and inefficiency. It depends upon the art we use to make our bodies express just what we desire.

This art as a means I have endeavored to give in the following pages.

BERNARD BERNARD.

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PART I.

THE PHYSIOLOGY OF EXERCISE.

Health is a condition in which each cell in the great community of cells which composes the body is playing its part properly. This can only be acquired and maintained by exercise.

Let us examine the function of food digestion.

The first process of digestion takes place in the mouth. Here the sugars and the starches are acted upon. On reaching the stomach the starches are dissolved and the proteids are prepared for further digestion in the small intestine. Along the digestive canal there are vessels leading off which carry the prepared food to the general blood stream. The sugars, starches and proteins having been dealt with, the fats, which have been emulsified by the bile, which is secreted by the liver, are passed into a receptacle belonging to the lymphatic system. From thence the fluid is taken by a tube up the body and it enters the blood stream near the shoulder.

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The lymphatic system is a large and important one, of a circulatory nature. It has no forcing pump or heart, as has the blood system. It is dependent absolutely for its functioning upon the pressure and kneading action of the muscular system. Were it possible to refrain from all muscular action (which, of course, is not possible) this lymphatic system could not function and the person would die.

The food having reached the blood stream, let us see how far matters could go here without physical exercise, for even though the food is digested it has to be taken to the various tissues and assimilated.

The heart keeps the blood in a continuous stream, but it is not entirely sufficient. The blood vessels themselves have muscular and elastic layers and in the smaller ones they require the action of surrounding muscles to knead and press along the pulse of blood in the same way as does the lymphatic system.

HOW THE BODY IS NOURISHED.

From the heart the blood passes into a big vessel, the aorta. This gives off branches to head, body and limbs. The

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farther from the heart, the smaller in caliber become the blood vessels, until, as capillaries, they are microscopic in size. It is while the blood is in these very small vessels that it comes in closest contact with the body tissue (nervous, muscular, bone, liver, etc.) and where the interchange takes place. The blood gives up a proportion of its oxygen and other forms of nourishment and takes in return the used up or waste substances.

When a muscle is exercised it expends energy. This energy is supplied by the food we eat, and, having been digested, exists in the blood. Naturally, as the muscles start working, they require more food; in other words, they require more blood. The consequence is that as soon as exercise is indulged in the heart acts more quickly so as to keep up the needed supply of nutriment. This is accomplished by means of the nervous system, and it is a simple illustration of the way in which the whole functions of the human body work harmoniously. An action in one organ calls for a correlating action in others.

Thus, then, the blood conveys food and keeps a used muscle of the body re-

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plenished. If the blood is rich in good food, the exercise makes the muscle healthy and strong. On the other hand, if the blood is poisoned it poisons the tissue. You see, it is not merely exercise that is needed; food must be properly selected as well. But, at any rate, exercise, in using up the food in the blood, prevents congestion and stagnation; and if you exercise regularly you need have little fear of blocking up your lymphatic and digestive systems.

To give a muscle no exercise means that it expends no energy and uses no food. If it were possible for a human being to refrain from exercise altogether he would die. When the Fakirs hold an arm extended in the air to comply with their religious beliefs, the arm dies after a while, and remains in the position in which it was left to die.

THE IMPORTANCE OF THE BODY MUSCLES.

We can live without arms and without legs, but we cannot live without bodies. Therefore, even if we exercise our arms and legs most vigorously and keep our bodies still, our exercising will not be efficient. The vital functions de-

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pend on the exercise of their surrounding muscles.

There is a relation, obviously, between the exercises performed and the food consumed. People who do not exercise by no means limit the food they eat, and this leads to the whole system becoming clogged. The heart and lungs are not called into use as they ought to be and in consequence they, too, become weak, and anemia, indigestion and nervous troubles must result. For if a muscle does not work, it loses power. Give the heart and lungs no exertion and they, too, inevitably become disordered.

So you can easily see now why it is that muscles become big and strong when exercised and weak and flabby if not. It is not the particular object of this book to show you how to develop enormous arms or a big chest or Herculean strength, but the budding Apollo will not acquire these unless his vital organs are in good order; so he will be wise to bear the above points in mind. It is possible, however, for all of us to be proportioned according to our hereditary type of physique and, what is of greater importance, to have a sound,

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efficient, healthy body, a body beautiful to look upon and able to express the maximum in quality and output.

FOODS.

FRESH AIR.

Having dealt with the physiological processes in the digestion and assimilation of foods, let us examine the foods themselves. I remarked that the first process of digestion takes place in the mouth. Indigestion and poisoning often start before the foods ever reach the body. In other words, it is essential that the foods we take into our bodies are the purest we can get.

In the first place let us consider air. We need the purest of fresh air. It is the oxygen in the air primarily which is the food we need. Although vitiated air may supply oxygen, it also contains proteid and gaseous poisons which are detrimental to health, acting either through the lungs or the skin.

On reaching the lungs the air comes into very close contact with the blood, so, by a process of osmosis, the oxygen filters through. The chemical action of the process is as follows:

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In the blood there is a substance known as haemoglobin. This is very readily oxydized and becomes oxy-haemoglobin. When the blood reaches the tissues it is deoxydized and so returns to the lungs to receive a fresh store of the life-gas.

The function of oxygen is to burn up the waste matter of the body. In the ordinary way there is a constant breaking down of substance and this must be burned up if the body is not to become clogged with poisons of its own manufacture.

Just consider this for a few moments and you will see the intense importance of fresh air and a good big chest to supply the blood with all the oxygen it needs. It is quite safe to say that the success of any athlete depends upon his chest capacity. But whether you are an athlete or not, you are dependent upon healthy lungs. You can do without sugars, starches and proteins for weeks, but try to live without air for a few minutes and you will feel mighty uncomfortable.

Keep your windows open day and night, and let each breath be full and deep. Acquire normal deep breathing

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as a habit. Don't shut your window because of a draught; it may be due only to your imagination. The majority of draughts are felt because people feel for them. Get used to feeling the fresh, pure air circulating your bed or living room. Better still, live right out in the open air if you possibly can.

CORRECTING INTERNAL TROUBLES BY BREATHING.

The cure for consumption is to live entirely in the fresh air. It is agreed that what will cure this dread scourge will also prevent it. It is surely much better to take fresh air while you are well than to wait until you are half dead and then be forced to take it.

A complete book on fresh air and breathing would not be too much to impress their huge importance. A complete system of physical culture could be worked out for use of the diaphragm only. The diaphragm is an internal muscular partition which separates the chest from the abdomen. It is the muscle upon which others depend for their strength. By arching it expels the air from the lungs and draws up the visceral organs. By flattening it draws air

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into the lungs and forces down the organs of the abdomen.

It serves two purposes, therefore. In the first place it secures air for the lungs, and secondly, it causes a motion and an auto-massage of the vital abdominal organs. Thus liverishness, indigestion, constipation and general troubles connected with the vital organs may be corrected by proper diaphragm control.

DEEP BREATHING EXERCISES.

In correct breathing the abdomen, you will notice, is protruded and drawn in alternately. This action, if exaggerated, is exceptionally beneficial, especially for those who have a tendency to constipation. The first movement is to let the abdomen protrude as much as possible, at the same time inhaling the fullest breath of air possible. The second movement is to exhale fully, blowing out much more than the quantity usual at an ordinary expiration; then draw in the abdomen forcibly. It is a good thing to do this exercise both the last thing at night and first thing in the morning.

I am giving you a special deep breath-

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ing exercise in this book, which you could practice with benefit at practically any time of the day. In fact, you should always do it before and after exercises, on rising in the morning and on going to bed at night.

Another time when it is useful to practice deep breathing exercises, is before you have to perform any unusual mental or physical feat, or before an important interview. You will find it a stimulant of an extraordinary nature. It is one of the finest methods of increasing will power and determination. When you are inhaling you should realize that you are taking life into your system, and you will feel almost an immediate effect of clarity in your thinking powers. It is also one of the best ways of overcoming shyness or nervousness. Draw in a few breaths and know at the same time that you are equal to the demands which will be made upon you. Before any athletic contest this exercise is invaluable; it is a secret I have always used personally in turning the feeling of nervousness to my own account. It is good to feel a trifle nervous, provided it can be controlled, and this is the way to control it.

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FIGURE 1.

*Full, Easy Breathing to Clean Up
the Lungs.*

*Do this deep breathing exercise sev-
eral times during the day. For in-
structions see page 75.*

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When you are nervous before any important event there is a secretion from the suprarenal glands sent into the blood; the deep breathing is necessary in order to supply the extra amount of oxygen called for by the blood in keeping all nerve centers and delicate end organs free from fatigue products. The whole organism becomes keyed up to the performance it has to undergo. So, if only you know how to take advantage of it, there is extreme value in this form of nervousness.

HOW WOMEN CAN CURE ANAEMIA.

Women are greater sufferers from anaemia than men. It is not to be wondered at, for they are the ones who strap corsets around their bodies which hamper the free action of the breathing organs. Instead of allowing the abdomen to control the breathing, the chest has to be raised and the visceral organs do not secure the movement it is their right and nature to have.

I have heard doctors and men who were looked upon as authorities on breathing remark that a woman breathes differently from a man. It is

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nothing of the kind. Women who have never worn corsets, or who have discarded them for a number of years, breathe abdominally exactly the same as men. Their organs require just the same exercise and treatment, they are similar in most respects.

The majority of cases of anaemia give way readily to proper physical culture treatment. All tight clothing must be avoided and the muscles educated to do their work again where corsets have been worn. Plenty of deep breathing must be indulged in and as much fresh air obtained as possible. Realizing that the majority of cases of anaemia are accelerated in their development by lack of fresh air, the anaemic woman will do all she can to see that her rooms are well ventilated and that she spends at least two hours entirely in the open air each day.

FRESH AIR AND THE GLORIES OF NATURE.

It is a wise plan for everyone to spend at least two hours in the open air each day. If deep breathing is included it insures against impure and impover-

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ished blood. I feel that fresh air is so important a factor in health that I am loth to leave the subject, which I must do. But let me conclude my remarks by making an appeal for the wider interpretation of the term "fresh air." It is in Ibsen's "Ghosts," I believe, that one of the characters is made to refer to "fresh air" in this sense. He comes into a room where the air is stagnant and a psychological impurity also prevails; and he appeals for the windows to be opened to allow in fresh air. There is a great deal of putridness in life, and fresh air is needed in every way. Go out into the country on every possible occasion and breathe in not only the rich oxygen- and scent-laden atmosphere, but the beauties of the trees, and the flowers, and of the rocks and stones. Learn to appreciate Nature's wonders and grandeur and see in her glory the infinity of life and existence. Life stands for more than the striving for bread and butter—or even motor cars and mansions—and to experience joy and appreciation of the beautiful is to live in a fuller sense. So when you are drawing in your full breaths, endeavor to draw in a freedom from narrowness,

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and have knowledge that you are taking in the best that life has to give.

DIET—WHAT TO EAT.

Having considered the first and most important item of food, i.e., fresh air, let us now turn our attention to other kinds of food.

Whatever we take into our bodies is either digested and assimilated, or it is expelled as waste matter. The body has to take the flesh of a potato, wheat, grain, fish or pig and turn it into human flesh.

There are many foods which clog and poison the body and must be avoided. There are other foods which are absolutely vital and without which we could not live. We have to choose a diet which is compatible with the constitution of the body and the body's ability to deal with it.

This, after all, is of great use to the athlete. It is not so much the food eaten as that utilized by the body. Personally, I have always been a very small eater, but I obtain the maximum amount of energy from my food. The eating of too much food may not only

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set up complications in clogging the bowel and the system generally, but it requires an enormous amount of energy to deal with it. Roughly, two-thirds of the energy obtainable from food is used in its own digestion. Thus you can deduce for yourself that by eating just what is necessary you conserve a great deal of energy.

Every organ of the body requires rest. The digestive organs are not exempt. No more than three meals a day should be taken. In fact numberless people find two meals sufficient. At least five hours should elapse between meals.

THE CLASSIFICATION OF FOODS.

I do not intend to worry you with complex analyses of foods and their values, although such would be well worth studying. But it is necessary, even in this general work on health, to have some idea of the nature of foods.

Ordinary foods are divided up into classes. There are starches, fats, proteins, water and salts. The proteins are often looked upon as the most important because they are nitrogenous and supply energy most abundantly. Eggs, fish,

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cheese, peas, beans, lentils, all are rich in protein. Starches are found in wheat, oats, barley and rice. Fats are butter, lard, olive oil, salad oil. Water is contained in every food, but plenty should also be drunk "neat." Salts are contained abundantly in fresh vegetables.

The body requires all these in certain proportions, and a properly and scientifically selected diet is one in which this is the case. Milk is practically a perfect food, containing everything necessary to the human body. The egg is also a perfect food in the same respect. Cheese is very nutritious, and fish is rich in phosphorus and protein. Fats are more necessary in cold weather. Requiring a greater amount of oxygen for their combustion they are more heat-producing. Fresh vegetables and fresh fruits are esteemed valuable and necessary in the diet, and are not taken nearly sufficiently by most people.

ANIMAL FLESH CONSIDERED.

The question as to animal flesh as a food is a very vexed one. Meat is a stimulant, but nobody can deny that it contains most useful items of nutrition.

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But there is no doubt that it is not absolutely necessary to human sustenance. As a food it is excessively abused, and I suppose that the majority of cases of body clogging and blood poisoning are due to overindulgence in it.

Meat eating has become such an ingrained habit that the average person looks upon animal flesh as a sort of essence of nourishment and no meal seems complete without its inclusion. To those who are not slaves of this habit, this seems out of the question, and it is difficult to realize that the meat that is served in the average restaurant is anything more than rag — it feels just as pleasant to eat anyway. Meat eating is quite an individual matter, although personally I should like to see it far less prevalent. After my return from the battlefields of Flanders, where I saw the horrors of human mutilation due to the savage instinct of slaughter which still lingers within us, I became a very enthusiastic advocate against the eating of animal flesh. This was because there is no doubt that the slaughter of animals and eating, unreflectingly, their dead carcasses, tends to keep active the savage instincts.

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Inasmuch as we want to eradicate from our lives all things which tend to demoralize—or which have no uplift in them—we should consider whether we are just meat-eaters out of conventional habit or not. We want healthy and developed bodies and lofty aspirations, and we should omit from our lives, I believe, those things which do not comply with this. It is being found out that man is not only physically what he eats, but psychologically also; his character and health and sanity are directly affected.

There are so many foods which supply even a greater proportion of nutriment than meat, and it is a superstition that one cannot live without it. In the olden days, when it was the custom for everybody to drink beer at meals, it was then thought that nobody could do without that. Wives even expected their husbands to die when they became teetotalers. Nobody holds such views now and I believe that the time will come when the eating of animal flesh will be looked upon in the same light.

CORRECT MASTICATION.

I have remarked that the first process

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of digestion takes place in the mouth. There it is broken up and well mixed with the saliva and its ptyalin, which prepares the starches for reception in the stomach. The nearer the breaking-up process approaches perfection, the more sure and efficient will be digestion. Chew your food absolutely thoroughly. An enormous number of people are suffering from indigestion, constipation, weakness and undernourishment merely because they omit to masticate their food thoroughly. Before swallowing, the food should be practically liquid, so that the act requires no effort and is really unconscious. Take your time over your meals, you will find that you economize time in the end by so doing.

I am giving you below a diet scheme you can follow with benefit. Do not, of course, stick too hard and fast to this. Remember at all times that variation in food as in everything else is beneficial. You can, however, rest assured that the scheme contains everything necessary to your sustenance.

A DIET SCHEME.

Breakfast. (1) A cereal with milk and dates, prunes or honey. Cereal may

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be oatmeal, barley, grape-nuts, or any of the prepared cereal foods obtainable from most grocery vendors. (2) This may be followed by a course of cheese or a cheese preparation. (3) Wholemeal bread and fresh dairy butter will complete the meal.

Lunch. (1) Soup; any vegetable soup will do. (2) Protein dish, which may be composed of an omelette (tomato or cheese), welsh rarebit or fish or eggs (preferably boiled), cabbage, carrots, onions or cauliflower to suit the dish chosen. (Potatoes and cheese, for instance, do not go together.) (3) This may be followed by a salad made from any fresh vegetables. (4) A few nuts and as much fruit as desired, may conclude this meal.

Supper. (Should be taken at least an hour before retiring.) A little vegetable soup, wholemeal bread and butter with honey or jam, prunes, a pear or a banana may also be included.

All your meals should be pleasant to you—and they will be if you practice your exercises regularly and act up to the other hints laid down in this book. Your articles of diet must please the palate, but the palate must be mastered

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by your common sense. Never eat so much that you have a full or bloated feeling. It is much better to stop eating before you have any *feeling* of being satisfied.

Obviously you must suit the time of your meals and even perhaps the nature of them to the calls your professional or business life make upon your time. But approach the above diet scheme as near as you can and you will not go far wrong.

In weaknesses and diseased conditions, special diets have to be arranged to suit the patient. The above is not intended as a curative diet, but one suitable for those desiring more abundant health. The ideal to strive for is to possess a stomach and body capable of dealing with ordinary foods. This is done by exercise and care in eating; but it is obviously important to avoid bad combinations of food and foods which are known to poison the body, such as white flour products, white sugar, polished rice and preserved foods.

THE SKIN.

The skin is a most important organ of the human body. It is an organ, al-

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though it is very infrequently referred to as such. It has several functions. It is primarily an excretory organ, getting rid of waste and poisonous matters of the body. It regulates the temperature of the blood, and acts as a sensory organ in conjunction with the superficial nerves.

There are two skins, really—inner or endodermis, and outer or epidermis. The inner skin contains the delicate nerves and organs. The outer is composed of several layers of cells. These are kept continuously fresh by new ones forming from the bottom, and the top ones being relieved. This accounts for scurf. Scurf in itself is not a bad thing. It is necessary, however, to keep the skin free from it as much as possible.

It has been proved that the cause of vitiated atmosphere in places of public gathering is not entirely due to the presence of carbon dioxide. It is due to tiny proteid particles and moisture given off by the lungs and the skin. Vitiating also prevents the correct functioning of the skin.

The skin excretes waste matter by means of its pores. The pores are tiny tubes which are connected with perspi-

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ration glands. As soon as exercise is performed there is the production of these waste matters, and they are thrown out of the pores in greater abundance than usual. Another correlating function takes place. Through the combustion due to the chemical changes in the body, heat is produced; and, as you know, the body has to be kept at a uniform temperature. This is accomplished by means of perspiration.

HOW THE BODY KEEPS AN EVEN TEMPERATURE.

If you remember your physics you will know that during evaporation of a liquid, heat is absorbed; that is, the liquid becomes cooler. This is the way the human body is kept at a uniform temperature. The more severe the work done, the more heat produced, its evaporation resulting in a cooling process.

But let me hasten to tell you that the excretion from the skin is poisonous and must be washed away regularly if the skin is to be kept healthy. If it is allowed to remain it will block up the pores, which is a very serious matter. The skin really breathes, and no more

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than you could bear your lungs to be excluded from the air can you live healthfully if the skin is blocked. There is a story told of a religious festival in which a boy was covered with gold leaf to represent a golden angel. The boy never lived to see the finish of the festival.

Too much care cannot be devoted to the skin. It is always pleasant to see a clear, soft and beautiful skin, and a little attention given to general physical culture is far more likely to result in a good complexion than the application of all the face creams in the world. Perhaps it is that I have a keen sense of humor, but I can never help smiling when I see an advertisement for a face cream. One might just as well apply it to the outside of the sewer pipes when they become choked up with filth, and expect the pipe to be cleaned.

A blotched skin denotes poisons in the blood, or a choking of the pores of the skin. Both conditions must be relieved and the normal functions of the skin allowed to operate.

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THE MORNING BATH—A GRAND TONIC.

The morning bath is not only a splendid tonic, it is a necessity to health. To take it is quite simple. Elaborate equipment is not at all necessary. It is possible to have a good sponge-down in your own bedroom, and simply have spread out a large towel or blanket to prevent splashing the floor, and on it a bowl of cool (not cold) water. Wash hands, face and neck thoroughly with soap and water. These being in direct contact with the air are most likely to become clogged with external dirt. Then dip your hands in the water and rub vigorously every other part of the body. The parts under the arms, between the legs, and the feet also require a fairly good sluicing.

Have a large rough towel handy, but one which readily absorbs moisture, and towel yourself until you glow with health and freshness. Practice the few exercises given later in this book; you will feel fit for a good day's work and turn it into pleasure because you are fit and well to do it.

It is wise to have a complete immer-

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sion at least once a week; wash the body all over with the application of soap and warm water. Cold baths are valuable, but should be taken either in the form of a spray or a plunge. Cold water can quickly be endured if deep breathing and rubbing are indulged in at the same time as its application.

There are still innumerable people who take only hands and face wash, and it is difficult to imagine how they can find any enjoyment in life at all. The sleepy feeling which remains during the day is not entirely psychological; it is due to the skin being unable to breathe properly.

CLOTHING.

The question of clothing naturally arises when discussing the skin. The body needs ventilation, as you can see, and the clothing must allow for this. Therefore, see that the clothes you wear are light and porous. They must, of course, be warm, but the lighter they are the better.

The same precaution applies to bed clothing as well. Heavy rugs and blankets are weakening. Lots of people do not know it, but they get cold because they do not make their beds

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properly. The clothing itself should allow for ventilation and then it should completely envelop the sleeper. Neuritis and rheumatism are induced by allowing a cold current of air to play upon an unprotected part of the body while other parts have to withstand excessive weight.

All underclothing should be changed once each week and the ordinary outer clothing should occasionally be sent to the cleaner.

Women usually clothe themselves very badly, packing waist and hips with thick corsets. These not only constrict the vital organs, and prevent the natural movements of the body, but they prevent the aeration of the skin.

The question as to whether the clothes should hang from the shoulders or from the hips has occasioned a great deal of discussion among health authorities. But the matter is negligible if the clothing is light. Heavy clothing hanging from the shoulders tends to restrict the expansion and rising of the chest in breathing. When hanging from the hips it may be drawn tight and restrict important blood circulation. While it is light and loose there is little to bother about.

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The body must be at all times, however, protected from sudden chills. In the winter, warm woolen clothing is the best and may be quite light in weight. In the summer, the less clothing worn the better.

The majority of people feel cold because they have schooled their bodies to do without proper ventilation. We can stand any amount of exposure on our faces, which is because we have accustomed them to take open air. The whole of the body could be made just as impervious to direct contact with the weather, if we treated it in the same way.

So don't coddle or muffle unnecessarily. Remember that the heat of the body is supplied from within; an active, brisk circulation, obtained by regular indulgence in physical exercise, will keep your temperature right in all weathers.

NIGHT WEAR.

During the night it is a good thing to wear nothing at all, but in the winter cotton pajamas are quite permissible. If you do your exercises just before retiring, you will not feel any shock on coming in contact with the cold sheets. On

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the other hand you will enjoy the freshness of them, and they will soothe you in preparation for slumberland. Of course, nothing tight or likely to hinder the circulation should be worn at night. This is of far greater importance than at any other time.

This wearing of tight clothing becomes quite a fetish with some people. Medical student friends of mine have told me that hospitals frequently take in people in a fainting condition brought on through the wearing of a tight belt or garment. One man was found to have a chain around his waist to hold up his trousers, and his boot laces were so tightly tied that his ankles were swollen to twice their natural size.

THE TEETH.

Fortunately, the majority of people are aware today of the fact that bad teeth mean bad health. However, a few words on the teeth will not be out of place in such a book as this; for it is necessary to give the teeth correct attention every day if the general health is to be preserved. When a tooth is decayed it means that it contains poison, both organic and inorganic. It stands

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to reason that food coming in contact with this poison must itself become contaminated and thus, when it reaches the stomach in a poisoned condition, it cannot be expected to do the body any good.

The object of cleaning the teeth is to obviate this condition, not to make yourself look pretty. There is no doubt, of course, that a clean white set of teeth does look well. If you have a good sound set of teeth, and your general appearance is one of wholesome health and fitness, and your facial expression one radiating the joy of life, it does not matter as to the shape of your features; you will be good to look upon. All that is healthy and happy is always a pleasure in companionship.

THE ANATOMY OF A TOOTH.

Covering each tooth is a fine layer of enamel. This is exceedingly hard, and ought to last a whole lifetime. It will do so providing the teeth are kept clean. Beneath the enamel, the tooth itself is a mass of bone. Poisonous substances may take quite a time to eat their way through the tough enamel, but when they have managed it success-

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fully, it does not take long to eat the bone away. In the center of the bone is the pulp, a still softer material, in which the nerve and blood vessels are embedded. Once the poisons reach this quarter the patient begins to jump, and is compelled to believe that his tooth requires attention.

You will gather, then, that the chief matter is to preserve the enamel. Recently there have been numerous attacks on the toothbrush. Several people have affirmed that dirty toothbrushes have caused more bad teeth than they have protected. Well, if people are so foolish as to allow their brushes to collect filth and dirt and place them into their mouths, it will be their own fault if they poison themselves, and not the fault of the brush. Anything can be abused. The toothbrush must be kept scrupulously clean, and it is well to place it in a little permanganate of potash occasionally.

In regard to a dentifrice, it would be hard to find a better one than ordinary camphorated chalk. This is both a cleanser and a preservative, and will keep the teeth beautifully white and clean. Most of the ordinary makes of

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dentifrice advertised are good, although I have heard of some which tend to eat away the enamel. By the way, to finish a meal with an apple is to insure the cleanliness of the teeth.

THE REMEDY FOR TOOTHACHE.

When once the tooth has begun to decay, it is useless to try to stop the aching by the application of any toothache mixture. The poison must be scooped out, the tooth must be either removed or stopped. A little iodine around the locality of the bad tooth will alleviate the pain temporarily, but nothing short of removal of the cause will take away the pain and the toothache permanently. A qualified dentist should be consulted, and he will save any tooth possible; but it is always better to have a set of false teeth than those which are poisoning food before it enters the stomach.

Where the tooth fits into the jaw there is a layer of gristly substance, known as the periosteum. This very frequently gets eaten away if teeth are not regularly cleaned, causing what we call periosteitis. The trouble with this form of tooth disorder is that it is not no-

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ticed by its possessor until the teeth become loose or drop out, except, of course, sometimes for the pain it inflicts. It also results in bleeding of the gums, which recede and become very tender.

Mouth and teeth cleaning is of extra importance in periosteitis. The water should contain a little permanganate of potash; the bristles of the brush must not be too stiff. Gum massage is very useful. Insert the index finger into the mouth and rub the gums gently in a horizontal direction backward and forward. Then rub the upper ones in a downward and the lower ones in an upward direction—in both cases toward the teeth. In this way the disease may be arrested and the teeth preserved.

Sometimes decay may be quite white and not perceptible and the toothache put down to neuralgia or nerves. A skilled dentist can detect this and put matters right.

HOW TO PRESERVE THE TEETH.

The general condition of the health may affect the teeth. Poisoned blood may cause abscesses or gum boils. So care of the health generally is very im-

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portant if you want to preserve the sound teeth you have. It is unwise to poke the teeth and the gums with a matchstick or pin. Even conventional toothpicks may be a source of danger if they are not scrupulously clean. If a food particle becomes lodged between the teeth it is best to draw a piece of silk thread through the space.

The teeth should be cleaned after each meal, on rising in the morning and on going to bed. The water used should be lukewarm, and there should be plenty of it. The mouth should be thoroughly rinsed out. Probably the most important times of all for washing the teeth are before going to bed and on rising in the morning. If you are too busy during the day to have a tooth wash after meals, by no means neglect to take these.

Never neglect your teeth if they cause you pain. Toothache is certainly one of the most lowering of pains, and causes severe shock to the nervous system. Pain is a most valuable thing to mankind because it signifies something is wrong and needs attention. But there are thousands of poor, haggard and miserable looking creatures today who

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are suffering torture, yet who need not do so. Pain infallibly registers itself, not only in the general system and in the health, but in personal appearance. Life should be a pleasure and joy to all of us, and it can be so. It is for that reason I have written this book. Although many of the points I am dealing with in detail may appear of little importance, depend on it, they sometimes have very severe consequences. It should be our object to be fit, healthy and strong in all parts of our makeup, and if we attend carefully to the minor matters the big ones will come out all right.

THE BOWELS.

Mankind's most prevalent complaint is constipation, or dirty bowels. Yet it is the easiest to set right. It requires just a little effort and forethought to maintain regularity of bowel functioning and so keep away that objectionable ailment which is the cause of so many others.

The bowel is a long tube through which the food is passed and nutriment extracted. That which is not digested is passed along and finally ejected. The latter part of the bowel is known as the

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colon or large intestine, which is a form of receptacle for the contents of the small intestine after the nutriment has been extracted.

The contents of the bowel can only move in one direction, and are kneaded along by a process of peristalsis. This is accomplished by a muscular layer in the wall of the intestinal tube, but it is assisted by the action of the surrounding muscle bands. The exercises in this book have been specially evolved with the end in view of assisting this process. So you will see that they are particularly valuable in all forms of constipation and indigestion.

The large intestine, or colon, is the part which, in constipation, becomes infected with poisonous matter. These poisons may become absorbed into the blood stream and poison the whole system. You can quite understand that blood which is going to feed muscle, nerve, bone, or any tissue will, if it is itself contaminated, only do considerable damage.

This is, in fact, what happens in constipation. There are people who walk about for days with horrible fecal matter in their insides. Is it any wonder

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that they are in an indifferent state of health? I have often wondered how many people keep alive at all, considering the absolute lack of care and cleanliness given to the insides of their bodies!

INTERNAL CLEANSING.

The body must be kept clean internally as well as externally. It is quite a simple matter to get into a "first thing in the morning" habit of a bowel action. Let it be the first cleaning process in which you indulge. Make an early morning attempt, even if for a time you are unsuccessful. It will not take long to establish the habit permanently.

The majority of opening medicines only weaken the organs and their natural functions and it is much the wisest plan to avoid them. From the point of view of diet, a sufficiency of fresh fruit and fresh vegetable food is usually all that is necessary to put matters right. But should the constipation be exceedingly obstinate the safest plan is to obtain a rectal douche.* No day should ever pass without a bowel action and

*A rectal douche can be obtained from the medical stores department of "Health and Life." Price \$2.50.

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should bedtime come and no motion be forthcoming naturally, an injection might profitably be taken. The douche, however, should be dispensed with as early as possible, and the bowel educated to act for itself.

So frequently does the large intestine cause infection to the rest of the body that it has been looked upon as nothing more or less than a receptacle for poisonous germs. The late Professor Metchnikoff, who was one of the greatest students of the subject of longevity, maintained that human life itself could be much prolonged if the large intestine were cut out altogether. Well, there is no need for this if it is kept carefully clean, which it can be by insuring a regular daily bowel action and by taking an occasional douche.

I have already explained in Part I how medicines weaken the natural functions, but I beg you to bear it in mind. The ideal should be to develop strong and healthy organs capable of functioning properly under all circumstances. Digestion mixtures have the same effects—they weaken the digestive powers. You want to develop organs capable of digesting normal food, and

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proper treatment will soon bring such response from them.

THE HAIR.

Very few people give their hair the rational treatment it should have. Either they neglect it altogether, or they plaster it with every make of pomade on the market. Then they are surprised to find on nearing the forties that they become bald headed.

It is always well to remember that man in his evolution has gone through many stages far different from that which he now enjoys or tolerates. Also the conditions under which our ancestors lived had not the remotest resemblance to our modern civilization. All our habits, therefore, must conform to a harmony or relationship between these many factors; our treatments for human ailments must also take these things into consideration.

For instance, our early ancestors were able to move their scalps quite easily. These muscles in modern man have become practically atrophied and have shrunk so that the skin becomes stretched tightly across the head. With our knowledge of biological recapitula-

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tion, i.e., the repetition in the individual of the stages of development of the race, we would expect this atrophy and stretching process to take place somewhat late in individual life, which, of course, is the case.

But it does not follow that the individual cannot help the reproduction of latterly acquired inborn tendencies. All the dogma which was thrust on us by the adherents of the two theories of the inheritance of acquired characteristics and absolute impossibility of such inheritance, has been very much questioned. The truths have been extracted and the errors thrown on the dust heap. So, we know that each individual has some power to fashion his life, but it must always be done, to be successful, in consideration of the inborn characteristics and tendencies.

Well, then, in spite of the atrophy of the scalp muscles, they can, to a degree, be kept supple by scalp massage. This is performed by pressing the balls of the fingers well on the head and, without causing any friction to the skin, rub the muscles beneath. Do this on every part of the head, so as to give all the muscles a kneading. This will bring

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blood to them just as exercise would, and in becoming more supple they will prevent the skin of the head from being stretched.

BALDNESS.

Those who have any tendency to baldness should practice these massage movements regularly. Great care, however, should be taken not to rub the hair violently, for the massage may in this way defeat its own object by pulling the hair out by its roots. This stretching of the skin on the head is one of the chief causes of baldness. It opens the hair pores and any slight pull on the hair is sufficient to dislodge it.

Each hair has little glands which secrete oil. Great care should be taken to utilize this natural hair oil. Too frequent washing may rob the hair of this and cause loss of lustre and, of course, baldness, for the skin will become dry and the hair loose in its roots.

Under ordinary conditions the hair should be washed or shampooed once a fortnight. There is nothing better than a good make of soap. Very often shampoo powders contain soda and borax which take away the natural hair oil. In all cases it is necessary to rinse

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the hair thoroughly in clean water after washing. Soap or shampoo powder left on the skin promotes scurf and brittle skin cells.

The remarks I am making apply equally to women as to men. Women frequently imagine that a luxurious growth of hair is due to some patent hair oil or pomade. It is nothing of the kind. Natural treatment and care of the hair make for its health and beauty.

Most women also wash their hair too infrequently. If the excretions are not cleaned away they can injure the hair by clogging the glands and the pores.

Men who work in dust-laden atmosphere should wash the hair even more frequently than once a fortnight. While too frequent washing is bad because it robs the hair of its natural oil, it is exceedingly necessary to avoid choking up the scalp skin with dirt. Of the two evils the less is frequent washing.

SCURF.

Scurf is the gathering of the dead skin cells which peel off as new ones are pushed up from underneath. It is nothing serious to worry about, and

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can be kept from becoming obnoxious by efficient brushing.

After washing the hair the application of a little liquid paraffin (Nujol) is beneficial. Grey hair, which invariably comes on with age, is due to loss of pigment; but it is hastened by worry and bad health. So if you become infected with the philosophy of health and fitness and make it part of your life, well then, any grey hairs you develop will be ones of veneration and nothing to feel displeased about.

PART II.

In this part let us make a light reference to a few of the most prevalent of human ailments. I do not intend this book to be one for reference to curative methods for all the various complaints. Each complaint has its characteristics and must be dealt with individually for the methods to be absolutely effective. But the majority of petty ailments are easily overcome. Usually they result from a generally lowered condition of the vitality, which, when toned up, results in the correction of these minor disorders.

Then, again, I look upon this book as one intended more for prevention of illnesses. If the body is kept always fit, no disease can assail it. That is the kind of body we want our millions to possess. Preventive measures are far more important than corrective. There is an old saying that it is more humane to have a fence at the top of the cliff than an ambulance at the bottom. It is certainly far more humane to prevent people from ever suffering from consumption,

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dyspepsia, neurasthenia, emaciation, or any other complaint than it is to furnish them with the most luxurious hospitals for their cure.

THE COMMON CAUSE OF ALL DISEASE.

All diseases have something in common. They are the outcome of the poisons triumphing over the natural forces for health. The remarkable researches into the domain of bacteriology have shown that various species of germs are associated with different diseases. Thus we have the *tubercle bacillus* in tuberculosis, the *spirochaeta pallidum* in syphilis, and the *bacillus diphtheriae* in diphtheria.

It is always difficult to distinguish between cause and effect, for they are not entirely independent of each other. An effect is always the cause of another effect, and human ailments go through a process we call a "vicious circle." For instance: one organ becoming weakened may cause a weakening of another. This latter again aggravates the former which in turn affects the latter.

So germs may flourish in a body clogged with poisons, and their added strength heap further intense disposi-

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tion upon the bodily condition. Followers of the germ theory are inclined to be quite definite in their belief that the germ causes the disease and overlook the cause of the ready reception of germs by the blood.

Well, then, it is necessary to know that stagnant blood is a fertile medium for the reception and growth of disease germs of all kinds. It is no use ignoring germs when they exist, for many of them can be seen at any time with the human eye by the aid of the microscope. But it is necessary to know the condition common to their breeding within the human body if we are to keep them away.

Infection is taken for granted, and no wise person will subject himself needlessly to it. All methods which assist in keeping disease at bay should be practiced. But it is well to remember that the body itself contains protective qualities. The white blood corpuscles are scavengers which devour organic poisons and break them down into harmless chemical constituents. The blood itself in a healthy person is antiseptic. The intestine contains several forms of bacilli which keep the contents from poisoning the healthy individual.

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PHYSICAL CONDITIONS FAVORABLE TO DISEASE.

But all these protective characters have their limitations. To insure freedom from disease it is necessary to keep them at the highest point of efficiency. If the fœcal matter is allowed to remain for days in the bowels, it is useless to expect the poisons to do no harm. They will overcome the natural protective forces and poison the whole system. That is only to be expected.

Again, if this process goes on, and every kind of food being stuffed into the system, and no exercise taken, the whole blood stream becomes stagnant and congested. What hopes have the phagocytes and vitality of overcoming hordes of rapidly reproducing germs which have found an ideal medium for their sustenance and growth?

Please do not think that I have exaggerated matters in the least degree. This is exactly what happens in the majority of human bodies. In spite of the knowledge that physical activity is an absolute necessity to health, people just pass on haphazardly from day to day and then, if they develop consumption,

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they talk of the disease as being congenital, and lay the blame on their parents or grand-parents. They have themselves to blame in every instance. In spite of any hereditary tendency to a disease, I say emphatically that there is no need for it to develop if proper care and attention are given to the culture of a general healthy condition. When conception takes place and the new individual is begun there is no disease. All that happens after this depends upon the subjection of the individual to conditions favorable to the reception of a complaint.

INORGANIC POISONS WHICH CAUSE DISEASE.

Those who still bow down to the exploded germ theory of disease believe there is a species of germ for every disease. They have even given names to many of them which have never been discovered. But it stands to reason that inorganic poisons may cause diseases just as readily as organic. The body may easily become toxic or acid by ignorance in diet. As a matter of fact the normal or conventional diet is most suitable for the promotion of a

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toxic or acid body. The unprincipled manufacturers of the ordinary food-stuffs foist foods on the public which are mostly robbed of their vital properties.

You could live for more than a month on no food at all, but you would die in three weeks if you tried to live on ordinary white bread, polished rice, pearly barley, and other devitalized "foods."

If only the medical profession in whose hands is supposed to rest the health of the community, raised its voice aloud in united condemnation of these things, the greatest part of human suffering would disappear. But, ah, what would the doctors do then, poor things? I am afraid that the stage in the evolution of human society to which we have at present attained is not conducive to virtue as the best policy. The system is wrong. Doctors ought not to be paid for keeping us ill—which is what it amounts to, if you think it out—they ought only to receive payment when they do their work efficiently and keep the community in health. It would then be to their advantage to stop the sale of poisons, and to assist Nature in overcoming weaknesses.

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Is it not a dangerous practice to pay men for cutting out important organs of the human body? Yet there are people foolish enough to entrust themselves to a surgeon who will offer to cut out the vermiform appendix or valuable lymphatic and other glands for \$500.00 a time. The men may be honest but the temptation is great.

CONSTIPATION.

Constipation is probably the most prevalent of all diseases, and is the aggravating cause of many serious complications. Keep free from it and you are likely to remain well; succumb to it, and you are sure to become unwell.

Plenty of fresh fruit and fresh vegetable food should be included in the diet. A change of diet may also be necessary. Usually it is just the result of the bad habit of inhibiting calls. The safest plan is to make every endeavor to establish the habit of a bowel action every morning immediately on getting up. A few tries irrespective of any preceding desire will soon fix this matter.

Obstinate constipation may be relieved by the enema. An injection of pure water should be taken in the eve-

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ning if no action has been forthcoming during the day.

Really, there should be a bowel action to every meal. Thus with three meals a day there should be three movements. With two meals there should be two. But even a motion of the bowels is not always indicative of freedom from constipation. Faulty foods cause fermentation and absorption of fecal poisons into the blood. There may also be slow, irritating passage of the contents along the alimentary canal. Proper food and exercise are necessary to combat this condition.

You will find the exercises given at the back of this book exceedingly useful for keeping constipation at bay. In fact, if you do them properly and regularly, I will defy you to suffer from constipation, if your diet is rational.

APPENDICITIS.

How many thousands of people have undergone the conventional operation for appendicitis needlessly! The fact that the vermiform appendix is inflamed is not a sign that this organ is a useless and irritating vestige from our ancestors which needs removing; but

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that the alimentary tract is poisoned. The chief object of this book is to show people how the condition may be avoided. The appendix may be the portion of the anatomy to cry out against ill treatment, but it is no reason why it should be cut out merely because it is possible to live without it in an apparent state of health.

Very frequently most useful lymphatic glands are cut away because they have become enlarged by their arrest of toxins. It would be much wiser to get rid of the toxins and save the glands, which are most useful defense barriers against disease. It is a wonder surgeons are not ready to cut off ordinary limbs as soon as they become a little painful, just because it is possible to live without them! (As a matter of fact, limbs have frequently been removed needlessly.)

What is necessary in appendicitis is to clear the alimentary canal of the irritating poisons. Little or no food should be taken until the inflammation is relieved and plenty of distilled water should be drunk. An enema should be taken twice a day until the inflammation has quite disappeared.

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To keep free from appendicitis avoid constipation. Pills and salts are useless. Keep the bowel and its action healthy by natural living and exercise.

INDIGESTION

Another very prevalent complaint associated with the alimentary canal is indigestion. If food is not digested properly it cannot be expected to be assimilated by the body. It ferments in the alimentary tract, and ends by poisoning the whole system.

Faulty foods must be avoided. Each individual has his peculiarities and he should ascertain those foods which do not agree with him and eliminate them from his diet.

Of intense importance is mastication. All food must be thoroughly chewed, and to such an extent that the act of swallowing is unconscious. A huge number of people eat a lot too much; but complete mastication will correct this to a great degree.

Digestive mixtures should be avoided like poison. They cause an immense amount of indigestion, and once you get into the habit of taking them, you will always have to take them. Make your

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organs strong enough to do their work naturally. If you have weak legs, you may find it easier to get about on crutches, but you will never be able to walk vigorously until you begin to dispense with the crutches and give judicious exercise to your walking muscles. The same logic applies to the digestive organs. Patent mixtures are crutches and prevent the natural work of the functions. With careful treatment weakened digestive organs will become strong enough to do their own work. You can take it from me, they are only weak because they have been abused.

Exercises are exceedingly important. Those given at the back of this book are efficient. They cause an automassage of the viscera and should be practiced as instructed.

HEADACHES.

Headaches may result from indigestion, constipation, or a generally run-down condition of health. They are a most useful sign that something is wrong. What is wanted is not to take a headache powder or aspirin to deaden the pain, but to put right the cause of the bother. If you will just examine

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your general mode of living, you will soon discover something which is wrong, and usually easily set right.

The general health rules must be adhered to. Plenty of fresh air, fresh vegetable food should be included in the diet, and meat and heavy protein excluded.

Sometimes faulty eyesight is responsible for a headache. An oculist should be consulted and any mechanical error in the eyes corrected with glasses.

SKIN AILMENTS.

Blackheads are very annoying in some people; but they are usually the result of insufficient bathing. A black-head is merely the gathering of excretion at the mouth of a sweat duct, and may occur where the pores are over-worked. The whole body requires a complete sponge-down every morning to avoid this condition.

Acne often results from blackheads. The dirt which has gathered at the opening of the sweat pore becomes so large in quantity that it ruptures the surrounding tissue and poisons it.

Eczema may also be brought on in this way. The superficial nerves may

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be irritated, the skin improperly nourished or diseased.

Few people realize that the majority of skin ailments are of nervous origin. A severe shock may cause a bad attack of eczema, for instance. But if the general nervous system is put out of gear by a poisoned blood stream through faulty living, then all sorts of complications are likely to occur.

Lack of vital food substance must be avoided. As much fresh food should be included in the diet as possible. Fresh fruit, greens, vegetables of all sorts, and milk and new-laid eggs could all be taken with benefit. But, of course, over-eating must be carefully avoided.

As much fresh air as possible should be obtained. Oxygen burns up waste poisons, and these poisons are usually saturating the blood of those with skin complaints.

Don't think that rubbing anything on the outside of the skin is going to do much good. The skin is nourished from within, and it is the internal functions which usually require attention. Adhere to the rules of general health and fitness; it will be more efficient and de-

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cidedly cheaper than all the ointment in the world.

Perspiring feet are not only offensive but exceedingly unpleasant to their possessor. It is dangerous to stop the perspiration, for the condition is usually a sign that there is poison in the body which needs eliminating. A complete bath or sponge-down every morning will take a great deal of the strain away from the sweat glands situated in the feet. This is done by stimulating the healthy action of those pores in other parts of the body. A little boracic acid powder sprinkled in the socks (which, in any case, should be changed each day) is very useful in drying up the excretion and making the trouble less irksome.

LIVER AND KIDNEY AILMENTS.

Liver ailments are responsible for most bad tempers, and their result—quarrels. Those who are liverish are irritated by trivialities, and have little control over themselves. They are constantly in “hot water” on this account, and whereas, at heart, they may be quite decent and amiable folk, their physical condition renders them obnoxious to their friends and acquaintances.

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The only cure for liverishness is by natural means. Exercise is most important of all, and change of diet is needed to release the already overburdened liver, and must be made as light as possible for a time.

Kidney complaints are frequently associated, or confused, with liver ailments. Both are caused in the same way, and both require similar treatment. Relief may be given to the kidneys by taking a vapor or hot air bath to stimulate the sweat glands of the skin to action.

A great deal of what is imagined to be kidney disease is nothing of the kind. A man or woman will read an advertisement for a quack kidney patent medicine in which is illustrated that pains in the back are symptoms of kidney trouble. After a heavy day's work in bending, the erecto-spinae muscles naturally become a little stiff and painful, and although these muscles are a fair distance from the kidneys, the person, in ignorance, will swallow a box of kidney pills to put matters right.

The extent to which venders of patent medicines are allowed to go in foisting their useless wares upon a gullible

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public is shameful. If only people would boycott these charlatans and do a little scientific exercise, and take some interest in the condition of their stomachs, there would be no occasion for the sale of any of this patent medicine muck. When muscles are not used regularly, and are suddenly called upon to work very hard, aching is a natural consequence. What is wanted is not a drug to drown pain, but a strengthening of the general muscular system which will avoid the condition in the future. The muscles ache because they are weak and the logical remedy is to strengthen them.

The exercises given with this book have special regard to the body muscles. They act as automassage for the viscera, including the liver, so that there is little chance of congestion while they are performed. The strength and fitness of the internal organs matter far more than of the muscles of the limbs; always bear this in mind, whether you are an athlete and aspirant to Olympic Games honors, or just a common sensible seeker after good health.

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RHEUMATIC TROUBLES.

Rheumatism is a most painful ailment, as well as a most prevalent one. It is due to faulty feeding; and a subjection to dampness and draught will bring on its painful attacks.

In spite of medical testimony to the absence of rheumatism in the armies during the war, it was particularly prevalent. The reason medical history reports its absence is that it was not recognized by the medical officers. I say many men suffered excruciating pain with rheumatism, but because there was no great rise in their temperatures they were bullied and treated practically as malingerers. It was the excessive use of meat, and particularly bully beef, which caused so much rheumatism. The damp in which we had to live was most suitable to its development.

Heavy proteins should be omitted from the diet in rheumatism and plenty of fresh fruit and fresh vegetable food substituted. The exercises given at the back of this book should be performed regularly and all the general health rules, particularly the automassage exercises, should be practiced.

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Too much care in regard to dryness of clothing before being worn cannot be given. Each article—especially the undergarments—should be put in an oven to make sure that no particle of moisture remains.

FASTING FOR HEALTH AND THE CURE OF DISEASE

Fasting as a corrective and preventive of bad health has been known and acknowledged for ages. It is not a fad or a crank idea, but is used in the best sanatoria all over the world.

The object of the fast is to allow the body to get rid of its poisons. Disease is really an exhibition of the body's efforts to throw out the poisons it contains.

Left alone the system will naturally clear itself. All poisons enter the body through the alimentary canal, and while a drug will only add to the already heavy work the system has to do in getting clear of poisons, complete abstinence from food will assist nature in elimination.

In the process of metabolism tissue is broken down and built up again. The building up is done as explained earlier

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in this book by taking nourishment from the blood. In the diseased person the blood is impure, and it is this which requires purifying. Well, then, when the fast is undertaken it is proven physiological knowledge that the body feeds upon the least important of tissues. Fats are used up first and nervous tissue is the last to be taken. In fact, it is extremely doubtful if the latter is ever taken at all, even if starvation ensues. The lacteals lining the intestine become lymphatic in function, and the eliminatory organs being kept in action, the disease or poison eventually clears entirely out of the system.

The fast has been used most successfully for the cure of severe diseases, but an occasional short two-days fast is exceedingly good to insure health and freedom from disease. It gives the body a chance and a sort of fresh start. It can be undertaken at home, and there is not the slightest danger attached to it. Simply refrain from taking any food for two days, but drink plenty of fresh—distilled if possible—water.

Care should be taken after the fast not to eat too much at the first meal.

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Offensive articles of food should in future be omitted from the diet.

For the cure of serious diseases, where the body is saturated with the poison of its own making, it may be necessary to fast for three or four weeks. But this should only be undertaken under skilled supervision. The length of the fast depends upon the condition of the body; ten days or a fortnight is usually sufficient for most complaints.

The bowels should be cleaned each day with a clean water injection by means of an enema. (This applies to both long and short fasts.) A little walking and general exercise may be undertaken, but as much fresh air as possible should be obtained.

A long fast must be followed by a diet of milk only or fruit or fruit juice only. Milk is a perfect food, and supplies all the constituents necessary to the body. Thus new and healthy tissue is rapidly built up; and, providing the patient does not go back to old habits of overeating on any sort of food, the health obtained will be lasting.

Just remember that disease cannot attack pure blood. Keep the blood

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stream pure and you need fear no illness. The fast will assist greatly in obtaining or maintaining this condition.

It is, of course, not always necessary to fast in order to eradicate quite serious complaints. By taking away the exciting factors in the diet such as proteins and starches it is possible to arrive at the same results, and often with the added advantage of absorbing the vital salts of fresh fruits and vegetables. Even cancer, consumption, epilepsy and asthma are curable in this way.

PART III.

EXERCISES.

It is my intention to make this book as helpful and complete as possible, and I am therefore setting forth a course of exercises for regular practice. I do not say that they will turn you into a muscular marvel or a Hercules, but they will assuredly keep your vital organs in good trim if done regularly and properly, and no man or woman can hope to be strong in whom health is not present.

For the development of great strength there is nothing to equal weight lifting. But it must be used in conjunction with other forms of exercise and athletics. For muscular development, muscle control is excellent and the use of an expanding apparatus is most valuable and will prove very efficacious.

There is often a lot of discussion as to whether exercises should be performed in the morning or evening. Personally, I think that a series of very light movements are necessary in the

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morning and some heavier ones at night before retiring. Therefore, I am giving exercises to conform to this.

MORNING EXERCISES.

The first thing to do on rising is to empty the bowel. A bath or sponge-down should follow. Then while still naked do the following exercises:

Exercise I

Deep Breathing.—Always begin and finish any sort of exercise or athletics with deep breathing. Raise the arms forward and upward, at the same time inhaling. When the arms have reached the position of Fig. 1, page 19, the maximum amount of air should be contained in the lungs which should expand in all directions.

The second movement is to bring the arms down sideways, forcibly expelling the air through the nostrils. On reaching the preliminary position again, as much air as possible should have been exhaled. Repeat exercise about three times.

NOTE.—Breathing exercise should be finished after the inhalation, *not* after the exhalation.

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Exercise 2.

Assume the "arms bend" position. This exercise is done in three movements. (1) Shoot the arms forward smartly and return them again, after a pause, to position. (2) Shoot them sideways and again return to position. (3) Shoot the arms upward and return to position. Do complete exercise about five times.

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FIGURE 2.

*Bending and
Stretching the
Arms to set the
bones in posi-
tion.*

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Exercise 3.

Bending and Stretching. — Assume position with arms held straight above the head. This exercise is also in three movements. (1) Bend backward and return again to position. (2) Bend forward without crooking the back and return to position. (3) Bend sideways and return to position. Repeat whole exercise about three times.

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FIGURE 3.

*Bending and Stretching the Trunk to
give the vital organs movement and
massage.*

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Exercise 4.

Shadow Punch-ball Exercise. — In this exercise you imagine you have a punch-ball in front of you and you knock the stuffing out of it by each fist alternately. Do not simply thrust out each arm, but work the shoulder muscles, which is the object of the exercise. Your own breathing will tell you when you have had enough of this exercise.

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FIGURE 4.

*Shadow Punch Ball Exercise
to send the blood circulating
through every portion of
the body.*

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Exercise 5.

Deep Breathing to Wind Up.—You will find that Exercise 4 has well prepared you for your final breathing exercise. This should be done exactly as described for Exercise 1. It will fill your lungs with good fresh air and make you feel fit for your day's task, whatever it may be.

SELF-MASSAGE EXERCISES.

Massage has a most beneficial action on the body. By its means the circulation of the blood may be stimulated in any part desirable. Old worn-out tissue is kneaded away, making room for healthy replacement by the new.

Massage has a good and stimulating effect upon the skin and nervous system. Not only the superficial nerves may benefit, but the central nervous system may be greatly soothed and set in order.

These exercises are not intended to simulate the scientific manipulation of an osteopath or masseur. But they will give a good tone to your muscles and enable you to keep the tiring ones of the hands and feet and other parts of the anatomy in good order.

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They should be practiced at the completion of the ordinary set of exercises—morning exercises, evening exercises, or apparatus exercises.

There are three movements in these massage exercises. The *first* is *kneading*, a process of squeezing and pressing every part of the muscles. The *second* is *tapping*—a process of patting and light slapping. The *third* is *rubbing*—passing the hand along the skin.

These self-massage exercises may be done without the use of embrocation or oil. Only if the skin is sensitive is it necessary to apply a little olive oil to the hands before rubbing. It is the massage which counts, and there is no mystery about its qualities—its effects are quite physiological and sound.

Always rub in a direction toward the heart. The object is to assist in the passage of the blood along the veins. The arterial blood has the heart and the muscular and elastic layers along the arteries which force the blood along; but the venous blood merely flows back to its seat of origin. Massage will, therefore, prevent congestion and assist metabolism.

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Exercise 1.

Sit on a chair and raise one foot onto your knee and proceed to practice the three movements of massage explained above on the foot. Do both feet.

Exercise 2.

From a standing position reach down and massage each leg in an upward direction.

Exercise 3.

Massage in a circular direction—the way the hands of a clock go round—the abdomen. This is particularly soothing after body bending or raising exercises.

Exercise 4.

The back is somewhat difficult to reach, but the effort to do so will do you good. The small of the back is fairly easily managed and should be well rubbed with the palms of the hands. Another movement may be introduced here and that is rubbing with the backs of the hands, by means of which quite a large area of the back can be massaged.

The upper part of the back, down the spine and along by the clavicles should be massaged by a second party, once a week if possible.

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Exercise 5.

The neck and chest can be massaged fairly easily and should be done in combined movements. The hands may be brought down from the neck over the chest. You can develop quite a shapely neck from a scraggy one by persistent and careful massage.

Exercise 6.

The arms should be started from the wrists. The small muscles of the hand and wrist should be carefully done. Work in an upward direction toward the shoulder.

EVENING EXERCISES.

The exercises to be practiced in the evening should be of a more complete and vigorous nature. They should be done while wearing as little clothing as possible, but every care must be taken at all times to safeguard the body while it is hot and in a state of perspiration from sudden and chilly draughts.

Do not be too particular about the minor details of the exercises—copy them as nearly as you can, but realize that the more they resemble the directions the more beneficial they will be.

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Exercise 1.

Deep Breathing.—Exactly the same as the one contained in the morning exercises. Two or three deep breaths will be sufficient.

Exercise 2.

Place the hands on the hips lightly. (1) From here, turn the body to the right and look around and upward over the right shoulder, twisting to the furthest extent. (2) Return to position. Do the same movements to the left. Repeat the whole exercise about six times.

Exercise 3.

(1) Stand at attention as the preliminary position. Now reach down and bend the legs, placing the hands on the floor, with the arms on the inside of the knees. (2) Shoot the legs out to the rear in one complete and vigorous movement and see that the body forms a straight line as in Fig. 5. (3) Bend the arms. (4) Straighten the arms again. (5) Bring the legs up to the squat position. (6) Stand up to attention again. Do the whole exercise with as much vigor and freshness as possible and it will make you feel alive. The whole exercise may be done five or six times.



FIGURE 5.

Bending and Stretching the arms will develop good chest, arm and shoulder muscles, and incidentally, put the stomach muscles into action.

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Exercise 4.

Lie flat on the floor and grasp a fender or some fairly stable object with your hands. (1) Raise the legs slowly and bring them over the head as far as possible to the position represented in Fig. 6. If you are a beginner or have neglected to exercise for a number of years you may find this movement difficult. If you cannot do two legs at once, do one at a time until the muscles are strengthened sufficiently to do the complete movement. (2) Bring legs slowly back to position. This exercise should be done as many times as possible without too much strain, but there is never any need to do it more than 16 times.



FIGURE 6.

*Do this exercise seven times a day and you will never
worry about constipation.*

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Exercise 5.

Bend the body forward with arms extended sideways. (1) Turn the trunk to the left, keeping the body still bent, as in Fig. 7. (2) Turn the trunk in exactly the opposite direction, but on the other side. Repeat these turning movements about 12 times.

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FIGURE 7.

Bend the body forward and turn the trunk from left to right, and give the body muscles good action.

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Exercise 6.

Lie flat on the floor, but this time with your feet beneath some fairly stable object, such as a fender. (1) Raise the body as in Fig. 8. (2) Lower the body slowly to position again. Repeat exercises about six times. Should you not be able to do this exercise at once, you may obtain the assistance of your outstretched arms by pressing with your hands on the floor, but the sooner you can do without the assistance the better.



FIGURE 8.

A STOMACH STRENGTHENER AND ITS RECORD HOLDER.

This sitting up exercise will strengthen the abdominal muscles and keep the stomach in order. George Weber, who is here seen performing the exercise, holds the world's record with 1700 sit ups in one hour. You need only do it a few times to feel its good results. Arthur F. Gay, also in the picture, the famous American Weightlifter of Rochester, is Weber's trainer.

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Exercise 6.

Hands on hips, raise the body on to the toes. (1) Bend the legs and lower the body to the position in Fig. 9. Straighten the legs and raise body to attention.

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FIGURE 9.

Bending and stretching the legs in this exercise will give shapely legs and strong ones; and it will also tone up the general blood circulation.

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Exercise 7.

Bend down and get as near to touching your toes as you can manage. From here, keeping the arms outstretched and parallel with each other, describe the largest circle you can with your hands. Begin to the right; you will first of all arrive with the body bent sideways to its fullest extent. Continue the circle and you will arrive with trunk bent backward to its fullest extent. Carry on the circle and your body will be bent sideways to the left. Finally you arrive at the starting position again. After three or four circles, reverse the direction; i.e., to the left instead of the right, and do three or four more.

Exercise 8.

(1) Bend the right knee and raise it so that the upper leg forms roughly an angle of 90° with the body, with the lower leg parallel with the body. (2) Lower the leg to the floor. (3) Raise the right knee to the position explained in movement 1. (4) Lower leg to floor. The movements should follow on each other, right and left legs alternately, and the speed increased until a form of stationary running is performed. Your

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own condition will soon remind you when you have done enough.

Exercise 9.

Deep Breathing. — Exactly as explained before. You will be quite ready for this and will feel invigorated and refreshed after five or six deep breaths.

YOUR RIGHT AND DUTY TO BE WELL.

Let me make a final appeal to you to do your exercises regularly and conscientiously. You should, of course, have one rest day each week, and women should not do them during their periods. But the efficiency of the exercises depends upon the way you do them. Your health, efficiency, happiness and success rest in your own hands. Make life worth living. Join the ranks of the happy brigade, determined to reap all that is best, beautiful and healthy in life. If everybody did this it would not be long before the world would be rid of its plague spots and miseries; for society is but the sum of the individuals composing it. Let each one be conscious of his right and duty to make himself and his fellows healthy and bright; and it will not be long before we have a better world.

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